

ABSTRACT

A system is provided for locating a target, such as a person, relative to a projection screen, the system including two infrared light sources for casting separate shadows of the target on a translucent screen, such as those commonly used for back-projection displays. A sensitive video camera with an infrared filter over the lens that blocks all visible light is located behind the screen. This video camera captures a crisp silhouette for each of the shadows of the target. Image processing techniques detect the person's location as well as typical gestures, such as indicating or pointing to an area of the screen. This allows natural interaction with the display, for example, controlling a pointer or cursor on the screen by pointing at the desired area.